



## **Chapter 5**

### **River Segment Recommendations**

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# CHAPTER 5

## RIVER SEGMENT RECOMMENDATIONS

### 5.1. Introduction

In Chapter 4, recommendations were included that applied to the Kenai River mainstem and, quite often, to the entire of the river watershed. The majority of the recommendations contained in this Management Plan are areawide, reflecting the need to treat the river as a dynamic *system*.

This Chapter, however, focuses on those recommendations specific to a particular river segment. Its purpose is to give added specificity to the recommendations of the Management Plan tailored to each of the three river segments.

The river system, for reasons of convenience, has been divided into three general segments. These are further sub-divided into seven reaches. Dividing the segments into reaches allows for additional specificity in recommendations and management. This convention of dividing the river into segments and reaches was first developed in the 1986 Management Plan. The same segments and reaches with the same start and end points are retained. See Map 5-1 in this Chapter and Maps 4-1 through 4-4 in Chapter 4.

#### **Lower River Segment: Cook Inlet to Soldotna Bridge (RM 0 - 21)**

Reach 1: Cook Inlet to Eagle Rock (RM 0 - 11.5)

Reach 2: Eagle Rock to Soldotna (RM 11.5 - 21 )

#### **Middle River Segment: Soldotna Bridge to Outlet, Skilak Lake (RM 21 - 50)**

Reach 3: Soldotna Bridge to Naptowne Rapids (RM 21 - 39)

Reach 4: Naptowne Rapids to Skilak Lake (RM 39 - 50)

#### **Upper River Segment: Inlet, Skilak Lake to Kenai Lake Bridge (RM 50 - 82 and to Snow River Bridge on Kenai Lake )**

Reach 5: Skilak Lake

Reach 6: Outlet of Skilak Lake to Kenai Lake Bridge

Reach 7: Kenai Lake

Although the Kenai River has been divided into segments and reaches that reflect the way people think about and describe the river, this is, in many respects, an artificial division. It cannot be stated too strongly that the river operates as an integrated unit, with actions occurring upstream affecting the reaches downstream, to varying degrees. This division into units provides more specificity in management prescriptions, reflecting the general uniformity within particular segments and reaches.

The discussion that follows focuses first on a general goal statement for the Kenai River mainstem. Recommendations for the individual river segments are then described. These recommendations include general management intent, and management, facility, and acquisition recommendations. In some instances, these recommendations have already been referenced in the previous Chapter, and are repeated here to give an indication of *where* the previous recommendations apply. Maps 4-1 through 4-4 in Chapter 4 identify the location of the management, facility, and acquisition recommendations. It should be noted that the maps do not depict all of the recommendations included in the Management Plan — only those having a geographic context.

## **5.2. Kenai River Mainstem: Goals**

The following goal and sub-goal descriptions state the central basis for the management of the Kenai River and its various segments and reaches. The goals, objectives, and recommendations that are provided for the Lower, Middle, and Upper segments derive from the underlying principles of these statements.

**Goal:** To protect and perpetuate the fishery resources, wildlife and habitat of the Kenai River Special Management Area and adjacent areas, and to manage recreational uses and development activities within these areas.

This plan has been developed around the accomplishment of this goal and around the subsequent sub-goals:

To maintain the natural environment and the current natural condition of the river to the maximum extent practicable in order to ensure the continuation of the recreation, fishing, and scenic values of the Kenai River and its tributaries.

To protect fisheries and wildlife resources and their habitat, including migratory waterfowl.

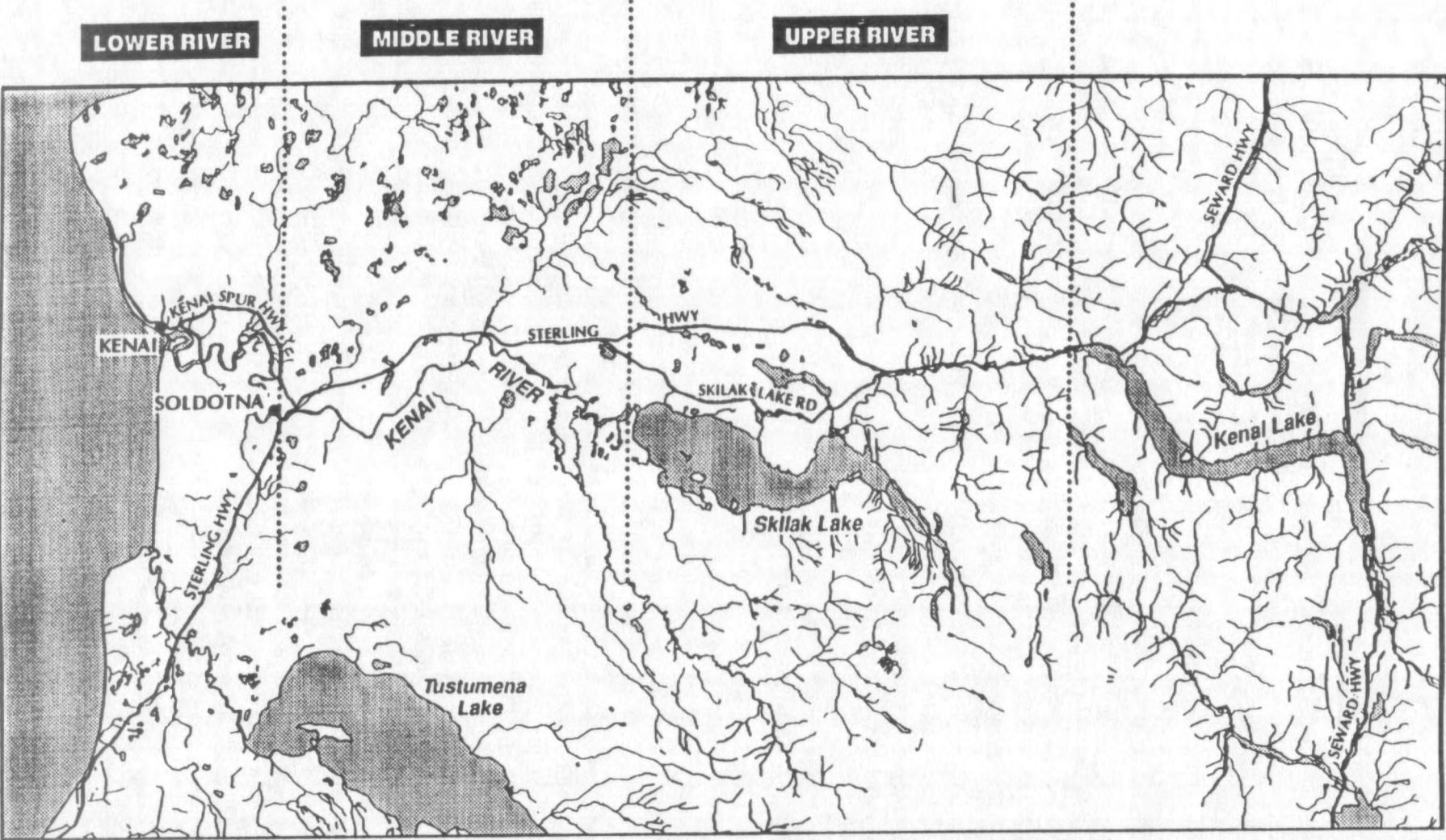
To identify and implement management recommendations that:

- ❖ Do not worsen the current overcrowding problems on the Kenai River;
- ❖ Maintain the Upper River as a drift only area (no motorized boats for fishing), reflecting an overall sense that this portion of the river should retain its natural character and that use levels should not increase;
- ❖ Retain as much of the natural character of the Middle River as practicable and limit the number of additional public facilities so as not to exacerbate the overcrowding beginning to be experienced,
- ❖ Recognize the intense recreational uses of the Lower River while maintaining as much of its natural character as practicable and continuing to provide facilities that both accommodate and mitigate the impacts of public use, and
- ❖ Limit new development adjacent to the Kenai River to uses that are of low intensity and are water and river dependent.
- ❖ Limit new public facilities adjacent to the Kenai River to those that are water related and water dependent (sanitary facilities, walkways, boat launches). Other public facilities (campgrounds) are to be located away from the river at sites appropriate for the public use and having adequate public access.
- ❖ Emphasize the upgrading of existing facilities in order to correct existing overuse conditions and limit the size, number, and timing of new public facilities to areas that can handle the projected recreation use and provide the full range of facilities necessary to make a new recreation site work. Public access and parking facilities should be provided to complement all new recreational use facilities.

## **5.3. River Segments and River Reaches**

The following descriptions of river segment management attempt to achieve the desired future condition of a particular portion of the Kenai River mainstem. The goal statements are meant to give direction to the way a particular river section is to be managed and guidance as to the types and levels of public and private uses appropriate for a given section. It is intended that the review and approval processes conducted by the local, state, and federal agencies responsible for the management of the river; its riverine area and contiguous wetlands, and adjacent upland areas are to be administered to be consistent with these goal statements. Recommendations relating to land use are meant to be advisory to local government. It is recommended that they be considered for use in land management actions (rezonings, variances, comprehensive plans).

# Map 5-1 KENAI RIVER: RIVER SEGMENTS



There are certain uses that are appropriate to all of these sections,<sup>5-1</sup> given proper siting and development conditions: recreational facilities and areas of public land. Low density residential uses are also appropriate in all areas with adequate setback and the proper siting of on-site disposal systems. Certain other types of residential uses, including recreational vehicle parks, mobile home parks, large campgrounds (larger than 10 units), and both medium and high density residential uses (except within the cities of Kenai and Soldotna) are inappropriate<sup>5-2</sup> in all sections of the mainstem and their further development should not be encouraged. Uses, like trail systems linking bank fishery areas, are appropriate in those sections where medium and high density bank fisheries are to be encouraged. Except for existing areas of industrial and commercial uses, further industrial/general commercial development along the mainstem is not encouraged. Commercial development that is of limited extent and river dependent may be considered appropriate for specific properties abutting the river with proper siting and design. Examples of these uses include Bed and Breakfasts (B&Bs)<sup>5-3</sup> and small lodges. General commercial uses are appropriate within built-up areas like Cooper Landing, Sterling, and the cities of Kenai and Soldotna, but are not considered appropriate along the mainstem. In all instances adequate protection buffers between the river and proposed development are mandatory in order to preserve the important riparian habitats. These buffers are also important to the health of the river's fish and wildlife resources; they also protect against or minimize the physical and economic impacts from flooding and erosion.

The use of All Terrain Vehicles (ATVs) is inappropriate except within beach areas at the confluence with Cook Inlet and where designated within the Chugach National Forest, e.g., abandoned mining roads near Moose Pass. Personal water craft (jet skis) and airboats are inappropriate for use on the Kenai River and Kenai Lake. Jet skis are currently prohibited.

### **5.3.1. Lower River**

#### **5.3.1.1 Management Intent**

**Lower River:** To protect and perpetuate the fishery resources, wildlife and habitat, and natural character of the river while recognizing the intense recreational and commercial use of the lower river. New or reconstructed public facilities should fully accommodate public use while mitigating the impacts of this use on these resources. This section of the river will continue to be used for both drift and motor boat use, as the location for a personal use fishery, and as a high intensity bank fishery at certain designated locations.

The inclusion of the lower four miles of the Kenai River downstream from the Warren Ames Bridge into the KRSMA emerged as a complex issue during the plan revision process. Reasons for possible inclusion included protection of habitat, management of recreation conflicts, and an improved ability to deal with the river as a complete hydraulic unit. The problems associated with the management of recreation uses, in particular, are expected to become increasingly complex and contentious. Arguments against inclusion focused on the addition of another layer of government and permitting, and the uncertain economic effects upon the seafood processors and commercial fishing fleet. After extensive discussions between the state and affected entities, it was determined that the recommendation of the Advisory Board to include the lower four miles of the Kenai River in the KRSMA be set aside. The City of Kenai argued that its municipal charter and existing authorities allow the City to address and manage many of the conflicts and problems that are identified in the Kenai River Comprehensive Management Plan, and that the inclusion of the lower four miles in Reach One is premature and inappropriate. Instead, the City recommended the use of a joint management approach for this portion of the Kenai River involving coordination and cooperation with DNR.

<sup>5-1</sup> By stating the desired future condition of the Kenai River, the Management Plan recognizes existing uses which may be inconsistent with those uses identified in the statement of desired future conditions. The Management Plan does not propose that these inconsistent uses be extinguished but that further expansion of the physical area of the use be precluded. Further, the recognition of river-related commercial (and industrial) activities should not be interpreted to mean that no restrictions will be placed on such commercial (or industrial) uses. Commercial activities within or adjacent to the river should be limited in number, unobtrusive, and specifically related to the commercial needs within the area. For example, commercial (or industrial) uses would be subject to restrictions on clearing, billboards, flashing neon signs, or any other visually objectionable characteristics. These restrictions may be considered for application where local land use regulations exist to control such site development features and through the city or Borough development review and approval processes.

<sup>5-2</sup> However, publicly owned, high density campgrounds may be appropriate if authorized by the Advisory Board or designated in the Management Plan.

<sup>5-3</sup> A bed and breakfast is intended to be a minor and incidental commercial activity located in a host/owner-of-the-enterprise occupied, single-family dwelling as an adjunct and accessory use which is an adjunct to and subordinate land use to the home. The use must be compatible with the character of the residential area in which it is located.

Based upon the previously stated concerns, it is intended that the lower four miles be managed in a cooperative manner between the City of Kenai, State, and other governmental entities. To this end, it will be necessary to monitor and evaluate the extent and intensity of conflicts affecting this portion of the river. The monitoring of recreational conflicts will be especially important. It may be necessary to initiate specific management actions, either by the City or State, to deal with these conditions in the future. It is recommended that the state, through the Advisory Board, meet on a periodic basis with the City of Kenai to jointly identify appropriate management actions.

It is possible that this approach will not be effective in addressing the concerns identified in the Management Plan. In the event that this occurs or conditions develop that cannot be managed by memorandum of understanding or municipal ordinance, the Advisory Board may reconsider its recommendation to include the lower four miles in the KRSMA, and initiate a plan amendment.

**Reach 1: Cook Inlet – Eagle Rock** In general, development in this section of the river should be focused on water dependent uses and only when these uses do not affect fish and wildlife resources and their habitat, and where there is a low bank erosion hazard. Specific management objectives include the following:

Protecting 1) the extensive Kenai River Flat wetlands for waterfowl resting and feeding, and to provide continued waterfowl viewing opportunities; 2) maintaining the unique and varied wildlife adjacent to this portion of the Kenai River; 3) retaining the viewshed of Mt. Redoubt and the other mountains on the east side of Cook Inlet; 4) recognizing the industrial uses within the last four miles of the Kenai River and the scattered commercial uses occurring in other parts of this river segment; 5) recognizing the traditional industrial and commercial uses within the lower four miles within Reach 1 and the priority of these uses; 6) recognizing and allowing current industrial uses to develop if the industrial use satisfies local, state, and federal permitting requirements; 7) recognizing the low density cabin and single family residential uses in the rural areas adjacent to the river; 8) continuing the motor boat fishery as well as the existing low density and moderate density bank fisheries; 9) continuing the personal dip fishery from boats and designated river banks and providing opportunities for water fowl hunting and like activities; and 10) recognizing the businesses and facilities that support the recreational activities of this part of the river, including but not limited to motor boat guiding and rental use, charter operations, fuel storage and dispensing, and B&Bs.

**Reach 2: Eagle Rock – Soldotna Bridge** To manage this portion of the Kenai River to 1) recognize low density cabin and single family residential uses in rural areas, and medium and high density residential uses in areas served by city services; 2) protect and preserve the remaining areas of undisturbed, sensitive fish and wildlife habitat; 3) maintain the currently diverse motor boat, bank (low and medium density) and drift boat fisheries; 4) encourage the development of business and facilities that support the recreational activities of this part of the river, including but not limited to motor boat guiding and rental use, charter operations, fuel storage and dispensing, and B&Bs; and 5) promote optimum water quality within this segment through active water management of point source discharges including the reduction and/or elimination of these sources. Canoeing/kayaking/rafting are permitted. Aircraft operations are also allowed except during the period of June and July between Soldotna and Cook Inlet, when such operations are prohibited because of potential inference with boats.

### **5.3.1.2 General Management Recommendations**

In addition to the general management strategies described in Chapter 5, the following management recommendations are to apply to this portion of the river:

- 2.1 The Lower River should continue to provide designated areas for the personal use fishery. (This recommendation is also an allocation issue and therefore requires concurrence from the Board of Fish.)
- 2.2 Increased agency enforcement presence should be allocated during the period of peak associated with the chinook and sockeye salmon runs. This increased presence should target vessel activity in habitat sensitive zones and at 'holes' with concentrations of vessels.

- 2.3 Neither the Borough or the State should authorize additional public accesses to this portion of the river unless adequate access, parking, and sanitary facilities are provided and the other criteria of Recommendation 4.5.3.6.3.
- 2.4 A high level of protection for waterfowl and wildlife should be afforded in the 'Kenai Flats' Wetlands through the permitting processes administered by the local, state, and federal units of government. Consideration should be given to the acquisition of portions of the more critical wetland areas, to coincide with wildfowl concentrations.
- 2.5 A 'bank protection zone' designed to manage vessel operations to reduce the effect of boat wakes should be established for the area between River Mile 9 and River Mile 18. DOPOR will consult with the City of Kenai in the development of the bank protection zones and in the identification of any additional areas that may need to be included in the bank protection zone.
- 2.6 Proposed developments within the Plan Boundary of the Management Plan should be carefully reviewed against the recommendations of the Plan, particularly with reference to the protection of the fishery resources, wildlife, and habitat of the Kenai River.
- 2.7 The Borough should give consideration to instituting rural, low density zoning in areas outside the corporate limits of Kenai and Soldotna within one-half mile of the Kenai River.
- 2.8 The City of Soldotna should assess the capability of the sewage treatment plant to meet state and federal quality standards, particularly given the perception of some members of the public that direct discharge into the Kenai River is inappropriate. Depending on the results of this analysis, other methods for sewage treatment and/or discharge from the plant's outfall may be necessary, which may include the relocation of the outfall to a site that does not directly discharge to the Kenai River.
- 2.9 DOPOR will consult with the City of Kenai, through the Advisory Board, to address any conflicts that develop between recreational boaters and commercial fishers, as well as the management of jet skis, hydroplanes, air boats and hydrofoils below the Warren Ames Bridge.
- 2.10 The recreational facilities in Table 4-2A should be implemented. The identification of future recreational facilities should follow the procedures described in Recommendation 4.5.1.2.1.2.
- 2.11 The riverbank restoration/protection projects identified in Table 4-3A should be implemented. The identification of future restoration projects should follow the procedures described in Recommendation 4.5.2.4.
- 2.13 The EVOS parcels acquired by the State should be managed according to the classifications in Table 4-4, unless title acquisition or EVOS acquisition restrictions require a different management strategy. If there is a conflict between the recommendations in Table 4-4 and the title acquisition restrictions, the latter shall prevail.
- 2.14 The Kenai Area Plan should incorporate the parcel retention and other state water and land recommendations of the Management Plan.

### **5.3.2. Middle River**

#### **5.3.2.1 Management Intent**

**General:** To manage this portion of the river to: 1) ensure healthy fish and wildlife populations and their habitats while providing for a high quality recreational environment, 2) accommodate the intense recreational uses associated with bank fishing at sites where adequate access and protective riverine structures exist or may be provided, 3) handle the existing levels of boat use through the provision of additional sanitary facilities and upgraded state recreational sites, 4) maintain as much of the natural character of the river as practicable through the purchase of private property and the inclusion of state and borough parcels in KRSMA, 5) utilize the Middle Segment for both drift and motor boat use, and 6) pursue site rehabilitation efforts on both private and public property.



The Middle Segment is in a transitional state, from relatively low boat use to potentially much greater use intensities as a result of a variety of factors, principal of which is the diversion of sport fishing boats from the Lower River during the King runs. The intensification of boat use on this river section is inappropriate since additional use will worsen the current vessel overcrowding problem(s) and the associated impacts upon private property created through trespass and vessel operation. The Management Plan recommends that the current levels of boat use not increase and that no new major recreational sites be developed except at Bing's Landing and Funny River. High use bank fishing areas would be focused at those state and federal sites with adequate sanitary facilities and parking, and where there is adequate protection of the riverine areas. The central theme for this section of the river is to not engage in efforts that encourage additional bank fishing or vessel use, while at the same time taking active steps to mitigate the impacts that can be expected to occur at existing recreational facilities.

**Reach 3. Soldotna – Naptowne Rapids** To manage this portion of the Kenai River to: 1) recognize low density cabin and single family residential uses in rural areas, and medium and high density residential uses in areas served by city services; 2) continue the present drift boat and motor boat uses and as well as bank fisheries, including high intensity bank fisheries (only) at designated public accesses and served by adequate public facilities; 3) allow reasonable levels of commercial uses which support but do not damage sport fisheries and their related recreational uses, including but not limited to motor and drift boat rentals and professional guiding; and 4) protect the remaining areas of undisturbed, sensitive habitat. The drift boat fishery is to be actively managed to avoid conflict with motor boat operations. Canoeing/kayaking/rafting are permitted, as are aircraft operations.

**Reach 4. Naptowne Rapids to Skilak Lake** To manage this portion of the Kenai River to: 1) recognize rural, low density cabin and single family residential uses ; 2) continue drift boat and motor boat and as well as bank fisheries, including high intensity bank fisheries at areas of designated public access and with adequate facilities; and 3) allow commercial uses designed to support these fisheries and their related recreational uses, including but not limited to motor boat and drift boat guiding and rentals as well as drift boat guiding. That section of the river from the outlet of Skilak Lake to the Kenai Keys Subdivision should be retained in its present natural character for the protection of wildlife and fishery habitat. Canoeing/kayaking/rafting is permitted. Aircraft operations are allowed throughout this reach except at the outlet of Skilak Lake during the period of active waterfowl use.

### 5.3.2.1. Management Recommendations

In addition to the management strategies described in Chapter 4, the following recommendations are also to apply to this portion of the river:

- 2.1 Increased agency enforcement presence should be allocated during the period of peak associated with the King salmon and Red salmon runs. This increased presence should target vessel activity in habitat sensitive zones and at 'holes' with lots of vessels.
- 2.2 Neither the Borough or the State should authorize additional public accesses to this portion of the river unless there is a demonstrated need and unless adequate access, parking, and sanitary facilities are provided.
- 2.3 A high level of protection for waterfowl and wildlife should be afforded in high value wetlands and other sensitive natural areas providing nesting, rearing, and other habitat functions through the permitting processes administered by the local, state, and federal units of government.
- 2.4 A 'bank protection zone' designed to manage vessel operations to reduce the effect of boat wakes should be established for the area between River Mile 46 and River Mile 39.
- 2.5 Proposed developments within the Plan Boundary of the Management Plan should be carefully reviewed against the recommendations of the Plan, particularly with reference to the land use guidelines stated above.
- 2.6 The Borough should give consideration to the institution of rural, low density zoning in all areas outside the corporate limits of Kenai and Soldotna within one-half mile of the Kenai River.

- 2.7 There should be no further development near the outlet of Skilak Lake unless it can be shown that the proposed project will not impair current wildlife migratory patterns. Note: public sanitary facilities are appropriate within this area, although their siting should adhere to the previous standard. A 'Critical Habitat Area' designation should be developed and subsequently implemented for the area from Skilak Lake outlet to the Lower Killey River confluence. The development of such a designation will require legislation approval.
- 2.8 The ADOT/PF maintenance yard on the Kenai River in Soldotna should be closed, and the site rehabilitated and redesigned for public recreation use. The salt pile should be removed not later than the end of 1997.
- 2.9 Prohibit the use of motor vehicles on riverbeds except at boat launches designated by the State or for approved uses (i.e., restoration projects) for which all applicable permits have been issued. This prohibition does not apply to aircraft and vessels.
- 2.10 Manage aircraft operations in the area between Moose River and Naptowne Rapids to avoid conflicts with other river users and insure the public's safety. Note: aircraft operations are already managed in portions of the Lower and Middle River where such operations might interfere with waterfowl.
- 2.11 Construct a 30 unit campground at the State's Bing's Landing recreation site, and consider and evaluate the development of a state recreation site at the 'Kenai Ranch' parcel through a public process if the Funny River Bridge is constructed.
- 2.12 In conjunction with the Funny River Bridge crossing for River Mile 34, ADOT/PF should acquire sufficient land for the construction and operation of a boat launch and associated parking.
- 2.13 The recreational facilities in Table 4-2B should be implemented. The identification of future recreational facilities should follow the procedures described in Recommendation 4.5.1.2.1.2.
- 2.14 The riverbank restoration/protection projects identified in Table 4-3B should be implemented. The identification of future restoration projects should follow the procedures described in Recommendation 4.5.2.4.
- 2.15 The EVOS parcels acquired by the State should be managed according to the classifications in Table 4- 4, unless title or EVOS acquisition restrictions require a different management strategy. If there is a conflict between the recommendations in Table 4-4 and the title acquisition restrictions, the latter shall prevail.
- 2.16 The Kenai Area Plan should incorporate the parcel retention and other state water and land recommendations of the Management Plan.

### **5.3.3 Upper River (Including Kenai Lake)**

#### **5.3.3.1 Management Intent**

**General:** The management of the Upper River is to be significantly different because of land ownership patterns, the land use and recreation use authorities associated with this ownership, the unique topographic condition of the 'Kenai Canyon' in Reach 6, and the presence of two large lakes — Kenai Lake and Skilak Lake. This area, except for private property along isolated portions of Kenai Lake and along the Sterling Highway within the Cooper Landing Section, is owned by the federal government (Chugach National Forest and Kenai National Wildlife Refuge) and is therefore subject to the plans and development authorities of these agencies. Development pressure is minimal on Skilak Lake and within Reach 6 except at Cooper Landing. Instead, use pressure dominates — fishing pressure along the Russian River and at the confluence of the Russian and Kenai rivers, and float (private and commercial) pressure between the Kenai Highway Bridge in Cooper Landing to Jim's Landing.

The overall management philosophy for this area is: 1) to manage Skilak Lake in a low intensity fashion, consistent with the US FWS management plan; 2) retain the natural character and use patterns of Kenai Lake by limiting development to private property and not authorizing the use of Kenai Lake for certain motorized uses during the summer months; and 3) manage the Kenai Lake to Skilak Lake section to retain the natural character and ambiance of this section by limiting development to the Cooper Landing Section, restricting the number of commercial float trips, and precluding motorized use of this section of the river except within the Cooper Landing Section (from RM 80.7 to the Kenai Highway Bridge at RM 82.0).

**Reach 5. Skilak Lake** To manage this portion of the Kenai River to: 1) recognize low density recreational cabin uses in existing in-holdings 2) continue low intensity motor and bank fisheries; and 3) maintain the current level of campground use. Limited intensity commercial uses may be appropriate if related to wildlife and scenic resources.

**Reach 6. Skilak Lake to Kenai Lake** To manage this portion of the Kenai River water system to: 1) recognize rural, low density recreational cabin and single family residential uses and limited, river dependent commercial uses in the Cooper Landing section (RM 80 to RM 82); 2) maintain the drift fishery on Kenai River and focus the high density bank fishery to designated areas on the Russian and Kenai Rivers having adequate facilities; 3) expand the drift only area to include the area between the power line and Fisherman's bend (RM 72.9 to RM 80.7); 4) focus the motor boat fishery to the Cooper Landing section (RM 80.7 to RM 82); 5) focus limited intensity commercial uses to sites within the Cooper Landing section; and 6) manage the river to maintain the existing world class rainbow fishing quality of this section. Motor boat rental and guiding facilities are only appropriate within the Cooper Landing section of this reach. The section of the Kenai River between the Russian River (River Mile 73) to Skilak Lake should be maintained in its present natural condition, particularly that area known as the 'Kenai Canyon'. Airplane operations are not appropriate within this section, except in the Cooper Landing section.

**Reach 7. Kenai Lake** To manage this portion of the Kenai River to: 1) recognize low density recreational cabin and limited commercial development along the shores of Kenai Lake and the Sterling Highway; 2) continue the motor boat and the low and medium density bank fishery; and 3) encourage the development of business and facilities that support the recreational activities of Kenai Lake and serve the traveling public on the Sterling and Seward Highways, including but not limited to motor boat guiding and rental use, charter operations, fuel storage and dispensing, B&Bs and similar commercial uses. Recreational uses are intended to be more diverse and intense on Kenai Lake, to include water skiing, sail-boating, canoeing, motor boat use, and snow machining. Aircraft operations are recognized. Except for limited recreational cabins and homes and some minor commercial uses along the Sterling Highway, the present natural character of Kenai Lake should be maintained.

### **5.3.3.2 Management Recommendations**

In addition to the general management strategies described in Chapter 4, the following management recommendations are to apply to this portion of the river:

- 2.1 The drift only area of the Upper River should be expanded to include the section between the definite 'power line' west of Sportsman's Landing (RM 72.9) and Fisherman's bend (RM 80.7).
- 2.2 The Upper River should be managed in accordance with both this Management Plan and the Upper River Cooperative Management Plan, following the Level of Acceptable Change process described in Table 5-1. Management of the Upper River will be divided between the US FWS, USFS, and DOPOR, depending on jurisdictional authority.
- 2.3 Increased agency enforcement presence should be allocated during the period of peak sock-eye salmon runs. This increased presence should target bank fishing and vessel activity in habitat sensitive zones and the confluence of the Kenai and Russian Rivers.

- 2.4 Additional public accesses to this portion of the river should not be authorized by either borough, state, or federal agencies unless adequate access/parking, sanitary, and solid waste facilities are provided.
- 2.5 An upper limit to the number of commercial float operators that use this portion of the river should be considered.
- 2.6 Efforts should focus on maintaining public ownership and access to the large parcel of federal land at the confluence of the Russian and Kenai Rivers that has been selected by the Cook Inlet Regional Corporation, Inc.
- 2.7 Proposed developments within the Plan Boundary of the Management Plan should be carefully reviewed against the recommendations of the Plan, particularly with reference to the land use guidelines stated above.
- 2.8 Continue the prohibition on the use of jet skis, hydroplanes, and airboats on the Kenai River. Restrictions on the use of these craft on Kenai Lake will be evaluated through a stakeholder involvement process. This process is intended to balance the impacts created by jet skis and the interest of individuals to use these craft in an unregulated fashion. Jet ski users as well as affected interests will be involved in these discussions.
- 2.9 Prohibit the use of motor vehicles on riverbeds except at boat launches designated by state and federal agencies, and on Kenai Lake on areas below ordinary high water. This prohibition does not apply to aircraft or vessels. Travel on the ice in the Winter by motorized vehicles is also permitted, including the use of these vehicles for wood collection authorized by state or federal agencies.
- 2.10 Prohibit the use of motor vehicles in exposed areas of lake shore below the ordinary high water on Kenai and Skilak Lakes where the purpose of that activity is to transverse the lake shore. Use of the lake shore for the purposes of boat launching is exempted from this requirement. This requirement also does not apply when there is adequate snow cover to support motor vehicles, as determined by DOPOR.
- 2.11 The unattended anchoring of vessels to either federal or state land in excess of 72 hours should be prohibited.
- 2.12 The streams on non-federal land draining areas in or near the Cooper Landing, Snow River, Moose Pass, and Quartz Creek areas should be included within KRSMA. These streams include: Crescent, Bean, Quartz, Shakleford, Juneau, Dave's, Dry, Slaughter, Indian, and Cooper creeks; and Trail River and Snow River. Also recommended for inclusion are Upper and Lower Trail Lakes, both of which adjoin state land.
- 2.13 The State should retain many of its parcels adjoining Upper and Lower Trail Lakes, the Trail River, and Kenai Lake for eventual inclusion in KRSMA. These parcels are identified in Tables 4-6C and 4-6D, and are depicted on Maps 4-3 and 4-4. Note: it is not certain that these parcels will be incorporated into KRSMA until the DNR Kenai Area Plan is adopted. These parcels are also subject to selection by the Kenai Peninsula Borough as part of their Municipal Entitlement. In the event that these parcels are transferred out of state ownership, the policies of Recommendation 4.5.4.5 are to be followed by DNR in the adjudication of the Borough's application for conveyance.
- 2.14 The State should designate a 200' vegetative buffer adjacent to Lower Trail Lake, Upper Trail Lake, Trail River, and Snow River if state parcels are conveyed to the Kenai Peninsula Borough as part of their Municipal Entitlement.
- 2.15 The Kenai Area Plan should incorporate the parcel retention and other state water and land recommendations of the Management Plan.
- 2.16 State and federal land within the Kenai River Watershed should be utilized in a manner consistent with the recommendations of the Management Plan.

- 2.17 Cooper Creek should be rehabilitated. Consideration of this objective should be included in the FERC re-licensing and approval process.
- 2.18 Timber harvest on state land depicted in the Upper River and Kenai Lake areas (Maps 4-3 and 4-4) and identified on Tables 4-6C and 4-6D is to be generally prohibited except where necessary to carry out the statutory purposes of the KRSMA. Timber harvest in other areas of the Study Area are to follow the policies included in Recommendations 4.5.5.6.1 and 4.5.5.6.3. It is particularly critical that, in any harvest operations that are authorized, a significant non-devegetated area between the principal highway and the harvest area be retained, prominent viewsheds are not impacted, there is careful adherence to state/federal water quality standards, and harvest plans be consistent with planned recreation uses within or are adjacent to timber harvest areas.
- 2.19 The recreational facilities in Table 4-2C should be implemented. The identification of future recreational facilities should follow the procedures described in Recommendation 4.5.1.2.1.2.
- 2.20 The riverbank restoration/protection projects identified in Table 4-3C should be implemented. The identification of future restoration projects should follow the procedures described in Recommendation 4.5.2.4.
- 2.21 The EVOS parcels acquired by the State should be managed according to the classifications in Table 4-4, unless title or EVOS acquisition restrictions require a different management strategy. If there is a conflict between the recommendations in Table 4-4 and the title acquisition restrictions, the latter shall prevail.
- 2.22 The Borough should give consideration to the development of low density residential zoning and commercial zoning, to reflect current and expected use patterns, in the Cooper Landing, Moose Pass, and Quartz Creek areas.
- 2.23 The Borough should consider the exchange of certain properties it owns in the Quartz Creek area for appropriate state lands more suitable for Borough purposes if, in an effort to protect the Quartz Creek watershed, the Quartz Creek area lands are made part of KRSMA. The Borough lands that may be considered for this purpose are classified preservation and are located within sections 36 of T5N., R3W. and section 30 of T5N., R2W. More specifically, these lands are located between the Sterling Highway and the Quartz Creek Road with the northeast boundary being the USFS Crescent Creek Campground, Survey 7937, and the southwest boundary being the USFS Quartz Creek Campground, PLO 6440.

**Table 5-1. Upper Kenai River Cooperative Plan Indicators, Actions, Standards, and Monitoring**

Value to be maintained or enhanced	Key indicator	Standard to be met	Management action (triggered if standard is not met)	Monitoring procedure & frequency
Healthy Fish Populations	Sockeye escapement at Russian River weir	Minimum escapement 16,000 early run fish & 30,000 late run fish	Restrict or close fishery as called for in the Russian River Sockeye Salmon Management Plan (05AAC 021.0361)	Install weir downstream from Lower Russian Lake from early June to early Sept. Annual escapement counts of early & late run sockeye salmon. (ADFG)
	Population dynamics of Dolly Varden	Maintain historic age, size, and population of Dolly Varden		
	Population dynamics of rainbow trout	Maintain historic age, size, and population of rainbow trout	Continue conservative management as determined by the Board of Fisheries.	A. Use field observations & reports from anglers to indicate when periodic surveys are needed. Compare with data from 1986, 1987, & 1995 studies. B. Conduct three to five counts of spawning rainbow trout on foot between mid-May and mid-June each year. (ADFG, USFS)
Healthy Riparian Areas	Habitat suitability on Kenai River Mainstem	No net loss of habitat as a result of bank angling	Further restrictions on the sockeye salmon fishery by ADF&G as provided for in the Riparian Habitat Fishery Management Plan (05AAC056.0065)	A. Survey bank from ordinary high water inland 10 ft. & ordinary high water offshore 6 ft. Record types of vegetation, cover, substrate, evidence of trampling & human made structures. Use HEP model to quantify habitat units. Conducted annually thru 1998. Comprehensive review of program by Board of Fisheries after 1998. B. Conduct float surveys from mid-June to mid-August and record location and number of bank anglers. Minimum of three surveys per year thru 1998. (ADFG)
	Habitat Suitability on Russian River	<u>Terrestrial</u> Plots in disturbance classes 1-3: no change in condition that results in a more degraded disturbance class. Plots in disturbance class 4-5: positive change in condition. <u>Aquatic</u> Minimum 50% overhanging bank vegetation.	1. Improve visitor education & information materials. 2. Increase informational contacts. 3. Close heavily impacted streambank areas and/or install elevated light penetrating walkways. 4. Revegetate closed areas where natural restoration is not occurring. 5. Increase enforcement.	Establish 15x3m permanent plots adjacent to the river. Measure percent canopy cover, percent ground cover, and percent covered by trail or trampled. Note all species present. Based on these indices, each plot is assigned a disturbance class rating. Repeat every three years. (USFS, FWS)
Water Quality	Benthic invertebrate populations	Less than 15% change in any of the following: Number of Ephemeroptera, Plecoptera & Trichoptera (EPT) genera -Decrease in EPT total genera ratio -Increase in Baetids/EPT ratio	1. Increase frequency of monitoring. 2. Educate public & property owners about materials that may be washed into the river by storm runoff or flooding. 3. Investigate the cause of change. 4. Increase enforcement of water quality laws & regulations.	Use a stovepipe sampler to collect samples at 5 locations between river miles 68 and 80. Record water flow & temperature. Sort & identify benthic invertebrates to the family level. Samples collected every two years in May.

**Table 5-1. Upper Kenai River Cooperative Plan Indicators, Actions, Standards, and Monitoring**

Value to be maintained or enhanced	Key indicator	Standard to be met	Management action (triggered if standard is not met)	Monitoring procedure & frequency
Healthy Wildlife Populations	Bald eagle nesting success	A. Nesting success rate & average number of eaglets per active nest not less than that recorded for the total surveyed western Kenai Peninsula nesting bald eagle population. B. Maintain historic numbers of overwintering bald eagles based on a 5 year average.	A1. Identify cause of problem & attempt to resolve. A2. Provide information to minimize human disturbance near nests. A3. Close areas around selected nests at critical times. B1. Investigate cause of decline & attempt to resolve.	A. Conduct aerial surveys of bald eagle nests in May to determine active nests, & in June, July or August to determine eaglet productivity. Repeat annually. B. Conduct monthly surveys of overwintering bald eagles by boat or aircraft from November thru March annually. (FWS)
Cultural Resources	Extent of damage to archaeological & historical sites	A. No intentional disturbance of site. B. No mineral soil exposed as a result of foot traffic thru site features or evidence of camping or campfires within features.	A1. Investigation & enforcement of ARPA violations. B1. Improve information materials & education programs. B2. Re-route trails or erect fencing to protect site features from foot traffic. B3. Develop a cultural resource management plan for the area.	Monitor 12 sites to assess conditions & document changes in vegetative cover, bank erosion, presence of trash, & evidence of foot traffic. Note conditions on site maps & document with photographs. In areas of concentrated use, monitor sites annually the remainder at 2 year intervals. (USFS, FWS, CIRI)
Quality Recreation Experience	Accumulation of human waste & litter	No more than six piles toilet paper &/or feces & less than 1/4 bucket of trash per transect.	1. Increase information materials & education programs. 2. Promote "pack it in/ pack it out" as a voluntary program. 3. Install additional toilets at primary access points. 4. Require users to pack out solid human waste.	Establish 8 transect sites. Measure sixteen 100-foot radial transect from center point. While walking each transect line, count the number of piles of toilet paper &/or human feces. Collect other litter in a 5-gal. bucket. Monitor transect annually after the second sockeye run. (USFS, FWS, ASP)
	Tolerance of crowding	At least 75% of the time there is at least 6 ft. between sockeye anglers in the confluence flyfishing area & 15 ft. in other areas & at least 30 ft. between rainbow trout anglers.	1. Provide information about where & when to avoid crowds. 2. Establish fixed capacities for parking areas: no additional or overflow parking areas provided. 3. Restrict drop off or shuttle services for bank anglers.	Observations of distance between bank anglers recorded by staff during routine bank & float patrols. Analyze data & repeat annually. (ASP)
	Competition for fishing sites	No more than 25 % of anglers surveyed had had trouble finding an uncrowded fishing spot.	1. Provide information advising anglers where & how to avoid crowds. 2. Establish fixed capacities of parking areas; no additional or overflow parking provided. 3. Schedule number &/or time of launches for guided trips. 4. Implement a permit system for all upper river users.	On site survey of boat and bank anglers using a random sample design. Ask how often they had trouble finding a fishing spot & what they will tolerate. Survey repeated every 3-5 years. (ASP)

**Table 5-1. Upper Kenai River Cooperative Plan Indicators, Actions, Standards, and Monitoring**

Value to be maintained or enhanced	Key indicator	Standard to be met	Management action (triggered if standard is not met)	Monitoring procedure & frequency
Agency Stewardship	Availability of agency staff	Minimum 8 hours/day staffing by uniformed law enforcement officers & 8 hours/day staffing by non-enforcement personnel June 15-Aug. 15 in the confluence area.*	<ol style="list-style-type: none"> <li>1. Coordinate scheduling between all agencies with law enforcement jurisdiction to improve coverage.</li> <li>2. Require agency personnel involved in law enforcement &amp; visitor services to wear uniforms whenever possible.</li> <li>3. Request funding for additional law enforcement personnel.</li> <li>4. Expand volunteer programs, such as Stream Watch.</li> </ol>	Record number of hours law enforcement officers and other agency staff are working in the area each day from mid-June thru September. Tabulate annually. (ASP,FWS,USFS)
	Information & education for river users	At least 70% of the survey questions are answered correctly.	<ol style="list-style-type: none"> <li>1. Identify subject areas where answers are incorrect; improve or add outreach media or delivery to address those subjects.</li> <li>2. Create a single, multi-agency source for accurate, consistent information.</li> </ol>	Random exit survey at primary access points to determine river users' knowledge of 5 categories of information: resource protection, bear safety, fishing regulations, & area facilities. Administered annually. (USFS,FWS,ASP)

\*The Confluence Area, for the purpose of this standard, is defined as the corridor between the powerline crossing on the Russian River downstream to the powerline crossing at mile 73 of the Kenai River.